REMARKS:

Claims 91-149 are in the case and presented for consideration.

The application and claims have not been rejected under 35 U.S.C. 112 so that they are believed to be in proper form.

Claims 91, 92 and 107 are the only independent claims presented.

Claims 91, 98, 99, and 103-105 have been rejected as being obvious from a combination of the U.S. patents to Challener, IV (US Patent 5,414,678) in view of Kim (US Patent 5,240,581).

Claims 92, 93 and 106 have been rejected as being obvious from a combination of the U.S. patent to Challener, IV in view of the European patent application to Tawara et al (EP 0 473 492 A2).

Claims 107-118, 123-125, 130-135, 137-140 and 143-149 have been rejected as being obvious from Challener, IV.

The remaining dependent claims have also been rejected as being obvious, however, if agreement can be reached on the allowability of the independent claims, the remaining dependent claims should also be allowable.

With regard to Claim 91, it was held that it would be obvious to use sputtering of the silicon compound as thought by Kim, in the double-layered optical disk of Challener, IV, to reach the claimed invention.

Challener, IV is silent as to how its alternating repetition of dielectric/magneto-otic layers 16, 18, 20, 22 and 24 are to be formed. Kim is silent as to whether its silicon nitride deposition technique would be suitable for an intermediate layer between

information carrying layers. Although Kim makes reference to a Fig. 1 which purports to illustrate the disk and its layers, the undersigned is unable to locate such a figure in Kim. The two sheets of drawings ("Sheet 1 of 2" with Fig. 2, and "Sheet 2 of 2" with Figs. 3 and 4) seem to contain no Fig. 1.

Accordingly, the person of ordinary skill in this field would at least be confused by the teaching of Kim, and would not find it obvious to combine Challener, IV with Kim. There is no suggestion in Kim that its imperfectly disclosed technique would be usefully for a double-layered data medium, and there is no teaching in Challener, IV that depositing in the intermediate layer at least one layer predominantly comprising Si_vN_w by means of a reactive vacuum coating process by freeing Si from a solid body into a process atmosphere with a reactive gas containing N, is useful.

Analyzing the references in another way, Challener teaches providing an intermediate layer, a dielectric layer, which may comprise silicon nitride, silicon carbide, silicon oxide, ytrium oxide, aluminum nitride, silicon aluminum oxinitride **or similar materials**. Thus, Challener teaches a list of possible materials without giving any preference as to which of such materials should preferably be used. From this list of a multitude of possible materials and "similar materials", it is already not obvious just to select the one material, namely silicon nitride, which the present inventor has found to be of particular value.

Further, Kim teaches to deposit by reactive sputtering at a magneto-optical disk a **protective layer**. Reactive sputtering is, in fact, as correctly recognized by the examiner, a reactive vacuum coating process which comprises the step of freeing silicon from a solid body, especially as taught by Example 1 of Kim.

Even if the skilled artisan does recognize from Challener that silicon nitride is specially suited to provide for the intermediate layer, he would not have any motivation to seek in Kim for a special deposition procedure. This is because the skilled artisan exactly knows that with respect to its optical qualities, **an intermediate layer** at an information carrier as claimed is much more critical than a **protective layer** of such a medium, and would, therefore, not have a motivation to seek in Kim for teaching of how preferably to deposit such a layer. Kim teaches such a process for a protective layer only.

Depositing the intermediate layer by a process as claimed, namely, e.g., by reactive sputtering, has tremendous advantages with respect to throughput and automation of the process. Nevertheless, the skilled artisan knows that the process with which an optical layer is deposited significantly governs the optical qualities of such layer and could not foresee that the claimed process, also being most effective, would provide for the requested characteristics.

Therefore, the huge number of materials as proposed by Challener, among others silicon nitride, would not obviate seleting just silicon nitride, and additionally, the deposition technique as

taught by Kim for a **silicon nitride protective layer** would not be obviously applied by the skilled artisan for depositing a **silicon nitride intermediate layer**.

Claim 91 and the claims that depend from it are therefore believed patentable over this combination of Challener, IV and Kim.

With regard to Claim 92, Challener, IV neither teaches how the intermediate layer should be deposited, nor even that $Si_vN_wH_u$ should be deposited at all. Tawara et al. does not teach the usefulness depositing an intermediate layer as claimed in Claim 92, between to information layers, but rather an outer protective layer with far less demand on its performance.

Challener does not specifically teach the use of SiNH, which could possibly only be considered as one of the "similar materials", as taught by Challener, Col. 4, line 66.

Additionally, Tawara teaches applying an SiNH layer as a **protective coating film**, much like the teachings of Kim.

As addressed above, the skilled artisan knows that the intermediate layer as claimed is considerably more critical with respect to its optical characteristics than a protective layer applied to such information carrier media. Therefore, it would not be obvious for the skilled artisan to select SiNH material known from Tawara as a protective layer material and to apply such material to the much more critical intermediate layer, even taking into account that Challener teaches "similar materials" without any preference. It is just in view of the critical optical requirements for the intermediate layer material, which makes SiNH

most advantageous with the NH components allowing for an exact trimming of the optical qualities. Such optical qualities and their most accurate trimming are not required to the same extent for protective layers as they are for intermediate layers as claimed.

Therefore, Challener combined with Tawara, do not obviate the method as claimed in Claim 92.

Claim 92 and the claims that depend from it are therefore also believed patentable over the combination of Challener, IV and Tawara et al.

The examiner further rejects independent Claim 107 in view of Challener. Claim 107 covers a method of making the information carrier claimed in the granted parent U.S. 5,965,228. Claim 107 addresses tailoring the intermediate layer as a function of λ_o, which is the wavelength of the radiation for reading information. Tailoring a layer in dependency of the wavelength of radiation or light treated by such layer clearly teaches the skilled artisan that here the technique of interference filtering is applied, where the optical behavior of such layer depends on its optical thickness. Clearly, Challener does not teach anything on how to tailor the thickness of the intermediate layer in relation to the wavelength of radiation being used for reading information. Thus, even if Challener reaches a large thickness range of 10 to 150 nm for such intermediate layer, it does not obviate applying a relation between the thickness of such layer and the wavelength of reading radiation as known from interference filtering art and

additionally, to recognize that even when applying such wavelength, dependency for the thickness of the intermediate layer, one may depart from accurately selecting "m" to be an integer as perfectly known from interference filtering art by the amount as claimed, thereby significantly simplifying the depositing step for such layer. This, in spite of applying interferences filtering techniques, the requirements for establishing an accurate thickness of such layer with respect to the wavelength of reading radiation may significantly be loosened. This is not obvious from Challener alone or in combination with known interference filtering techniques.

The undersigned plans on calling the Examiner in about four weeks to discuss this case with the hope that agreement can be reached on allowable subject matter. If, before that time, the Examiner has had an opportunity to review this reply and feels that matters remain which can be resolved by telephone interview, the Examiner is respect invited to call the undersigned.

Also the Examiner requested to note the attached change of address request. All future correspondence is to be sent to the undersigned at:

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By this amendment, thus, the application and claims are believed to be in condition for allowance and favorable action is respectfully requested.

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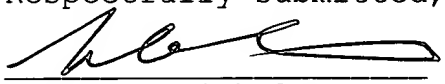
Respectfully submitted,



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